REMARKS

In response to the official action dated March 27, 2008, applicant requests reconsideration of the refusal of claims 1-22. applicant has amended claims 1, 8, 14 and 20.

The amendments to claims 14 and 20 address the Examiners objections under 35 USC 112, second paragraph.

Claim eight has been amended to delete the reference numeral.

The remaining claims now depend on amended claim 1. The claim is fully supported by the specification and no new matter has been added to the claims.

The high temperature bonding process according to the claimed invention is a bonding process, which is performed at a process temperature higher than 650°C. There are different types of such high temperature bonding processes.

The most important high temperature bonding process is the DCB-bonding process with a process temperature in the range between 1025 and 1083°C. This DCB-process is referred to in the introductory part of this application and is for example described in very detail in US 3 744 120 or in DE 23 19 854.

Another type of high temperature bonding process is the so-called active soldering process which is also referred to in the introductory part of this application and is described in very detail for example in the German Patent Application DE 22 13 115 or in the European Patent Application EP-A-153 618. This process is performed with a process temperature in the range of 800 to 1000C°.

Another type of high temperature bonding process is the so called hard soldering process which is performed with brazing or soldering material in form of an alloy containing copper and a further metal, for example silver and with a process temperature higher than 650°C.

A process with the features of the new amended claim 1 has remarkable advantages. In general, a cleaning of the metal coatings of the ceramic-metal-substrates is necessary after the structuring process, in order to remove oxides from the metal coatings and/or to enable further processing of the structured ceramic-metal-substrates for example by applying further metal like silver, nickel and, so on, on the metal coatings in order to enable soldering processes, for example for

assembling electronic components to the conductive tracks or contact surfaces of the metal-ceramic substrate and so on.

In known processing, a further final cleaning of the ceramic-metal-substrates is necessary for removing unwanted rests of the brazing resist and other contaminations.

As set forth in the claimed invention, the surface cleaning is made after applying the brazing resist coating by partial removal of metal on the surface of the coatings. Therefore only one surface-cleaning step is required during the production of the metal-ceramic substrate and by this only one cleaning step also oxides and unwanted parts of the brazing resist and other contaminations are removed from the areas to be cleaned.

As claimed in the invention, the brazing resist coating is applied to the unclean or untreated and therefore somewhat rough oxidized metal surfaces, so that the bonding of the brazing resist coating to the metal foils or metal coatings is improved by the rough and uncleaned metal surfaces. Furthermore, when removing some metal of the metal coating in areas bordering the brazing resist coating the metal thickness is reduced in these areas, so that barriers are formed in between the areas bordering the brazing resist coating and such areas covered by the brazing resist coating. These barriers assist the brazing resist when electronic components are applied by soldering to the conductive tracks or conductive surfaces outside the brazing resist coating. This means, that areas with reduced metal thickness may be used for receiving soldering material or for receiving the metal of an further metal coating so that the surface of this further metal coating is not above the structure of the brazing resist coating and the brazing resist coating can be full effective during a brazing process (see also figure 4 of this application).

The cited art does not teach a process or method with the features of the new amended claim1.

US 5 981 036

This citation art only teaches a method for producing a metal-ceramic substrate by a high temperature bonding process, namely by the DCB-process. A brazing resist is not referred to at all in this citation. Therefore there is not teaching of the invention, as claimed and the advantages it provides.

US 5 736 377

Ohsawa merely teaches a method of manufacturing a lead frame and of contacting the inner leads of the lead frame to electrodes of semiconductor chips or to electrodes of a printed circuit board comprising an organic substrate which is not at all suitable for a high temperature bonding process.

Furthermore this citation describes the use of solder resist (6) in between of the electrodes or lead structures.

Apart from that statement, the citation does also not teach all the essential features of the inventive method, namely the bonding the metal coatings to the ceramic layer by means of a high temperature bonding process, especially by the DCB-process, structuring at least one metal coating on at least one side of the metal-ceramic-substrate for obtaining conductive tracks, conduct surfaces and so on after bonding, applying the brazing resist to the structured metal coatings, and then cleaning the structured metal coatings by removing some metal of the structured metal coatings in surface areas bordering the brazing resist coating.

US 4 622 058

This citation does not refer to a brazing resist, but teaches a metal mask 201 to be superposed over a glass layer 98. The mask 201 is provided with a pattern of openings 203 in accordance with a desired pattern of vias which are formed in the glass layer 98A by a specific method described in column 7, lines 37 to column 8, line 6 of US 4 622 058. This known method has also nothing at all to do with the inventive method.

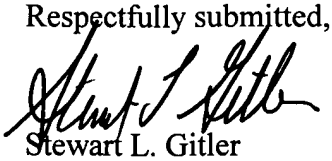
US 3 429 029

This citation does also not refer neither to a method for making a metal ceramic substrate not to a method with the combination of features of the new claim 23, but this prior art teaches a method of forming an semiconductor device, in particular of forming of ohmic contact to a semiconductor structure in a semiconductor or silicon wafer 10. There is no reference to a brazing resist. There is also no reference to the specific processing steps of the inventive process, or to the sequence of the processing steps of the inventive process.

As a result of the amended independent claim, supported by the specification, and the discussion setting forth the distinct differences in the citations, timely reconsideration of the refusal of claims 1-22 is requested.

If the Examiner has any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,



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